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To develop better occupational programs--especially paraprofessional--the college surveyed the interests of 421 students in the General College (Spring 1967). The students were asked to identify their occupational interests on entering college, their current interests, and to indicate whether these had changed or ramained constant. They were also asked what other programs would interest them if offered. They were further asked to express their interest in two career sequence programs now available (Dental Assisting, Marketing), in two that would be available for 1968-69 (Secretarial, Horticultural), and in any of six other sequences in various stages of development (Technical, Business, Foods, Police Science, Human Services Aide, and Education Aide). The responses to these questions are shown in tables. Such factors as age, number of credits attempted, sex, and employment status were also taken into account. (HH)

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A SURVEY OF THE OCCUPATIONAL INTERESTS OF JUNIOR COLLEGE STUDENTS

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It is a characteristic of the junior college student -- who will in time constitute the majority of the college population in the United States -- that although he begins his higher education intending eventually to pursue a baccalaureate program, he often in fact does not progress beyond the Associate in Arts degree. In many cases, this change of plan results from the student's discovery of goals more appropriate to his needs and abilities than those he originally envisioned. Many junior college students find, for instance, that there are increasing opportunities for them in the rapidly multiplying "para-professional" fields. Such opportunities spring from demands by employers for employees with two years of higher education combining general education courses with some vocational or occupational training. One result of employer demands is a continuing interest among junior colleges in vocational-occupational programs.

As the need for para-professionals increases, and as the new technology changes specific job requirements, educators become aware of the necessity to maintain a corresponding flexibility in adapting curricula to the requirements of the communities they serve. An essential ingredient in flexibility is accurate and timely surveys of societal demands. Such surveys generally are of two types: investigations of the personnel requirements of businessmen in a particular community, and research into the occupational interests of a particular college population. In Minnesota, the first kind of survey is completed periodically on a regional as well as a state-wide basis by the State Department of Employment Security. An example of the second, a survey of the occupational interests of 421 students enrolled in the General College in the spring quarter, 1967, comprises this issue of the General College Studies.

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In an effort to gather some information about student interest in various occupational fields -- occupations now generally referred to as "para-professional" -- 421 students enrolled in the General College during the Spring, 1967, Quarter were surveyed. Questionnaires were distributed in five General College classes to 286 male and 135 female students. On the questionnaire the students were asked to indicate interest in various occupational programs and to answer a number of questions designed to elicit some "background" information. Each student was asked, for instance, his age, the number of college credits completed, the name of his job (if he had one) and the number of hours employed per week. On the instruction sheet accompanying the questionnaire, the students were told that the General College was considering the possibility of developing new occupational programs that would combine general education courses with specialized courses and/or outside work experience in business and industry. Each student was then asked to complete a check list in order to indicate his interest in educational programs in 36 different occupational areas. The student could place his check mark in a column headed "THEN" to indicate that he would have been interested in the occupational program at the time he entered the General College; he could place his check mark in a column headed "NOW" to indicate his current interest in the program; he could check both columns; or he could check neither. (A copy of the questionnaire, with the accompanying instruction sheet, is included below as Appendix A.)

The responses to the background questions are summarized in Tables I and

II. Table I gives the 10th, 25th, 50th, 75th, and 90th percentile points of both the age distribution and the credits completed distribution. The results agree with what one would expect if he sampled a junior college population during the third quarter of an academic year.

Table I

Selected Percentiles for Age and Credit Distribution

Percentile	Age Distribution	Credit Distribution
90	22	79
75	20	70
50	19	45
25	19	28
10	18	21

Table II gives the number and percent of the students who work and also the average number of hours worked. Fifty-eight percent of the female students work an average of 17 hours per week while 42% indicate that they do not work. Male students work more, both in terms of percent actually working (66%) and the average number of hours worked (22). The percent of General College students holding jobs is only slightly higher than the percent of University of Minnesota sophomore, junior, and senior students employed as reported in another study, which indicated that 52% of the females and 61% of the male students are employed.*

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*Stecklein, John E., Huang, Andrew S., and Fenske, Robert H. Student Finances Study: An Analysis of Income and Expenditures of Sophomore, Junior, and Senior Students at the University of Minnesota, 1955-1956 Academic Year. University of Minnesota, Bureau of Institutional Research, December, 1967.

Table II

Number, Percent, and Mean Hours Worked

	Female	Male	Total
Number of students	135	286	421
Number working	78	188	266
Percent working	58%	66%	63%
Mean hours worked (working students only)	17	22	21

One of the items on the questionnaire asked the students to indicate the time they would prefer to devote to an occupational program. Table III shows the responses to the question: "If you have checked any of the above (occupational programs), would you prefer a one-year, two-year or a three-year program?" It is interesting to note that 50% of both males and females indicated interest in three-year programs and less than 4% in one-year programs.

Table III

Preferred Length of Program

		Undecided	One-year	Two-year	Three-year	Total
Females	Number	12	6	49	68	135
	Percentage	8.9	4.4	36.3	50.4	
Males	Number	36	9	97	144	286
	Percentage	12.6	3.1	33.9	50.3	
Total	Number	48	15	146	212	421
		11.4	3.6	34.7	50.3	

The 36 occupational programs included in the questionnaire were grouped on the check list under five headings: Technical, Business, Art and Journalism, Human Services, and Health Services. Table IV gives the frequency of the "NOW", "THEN", or "NOW" and "THEN" responses. Because each student had the option of responding to none of the occupational program items, to some of the items, or to all of the items, the frequencies associated with any given item represent students who may have responded to only that item, and they also represent students who may have responded to that and many other items. In fact, the average student expressed past and current interest in

two occupational programs and past but not current interest in one other. The average student also has become interested in one or two other programs which did not appeal to him when he first entered the college. The extent of current interest in occupational programs is indicated by the fact 87% of the students responded by expressing current interest in at least one occupational program.

Table IV

Interest Expressed in Individual Occupational Programs

	THEN	NOW	BOTH THEN AND NOW
TECHNICAL			
Business Machines Technologist (Computers)	36	29	43
Chemical Technician	13	16	14
Chef - Baker (food prep)	11	3	4
Communication Electronics	15	16	16
Electronics Technologist	15	15	18
Foods Technologist (processing, quality control, etc.)	8	5	6
Horticulture (greenhouse, management, landscaping)	11	9	8
Industrial Technician	14	16	16
Radio, TV Technician	14	13	21
Mean Response: Technical Area	15.2	13.6	16.2
BUSINESS			
Data Processing	29	39	52
Accounting	32	23	51
Hotel-Motel Management	14	22	28
Outside Selling (real estate, insurance, etc.)	17	16	28
Retailing (sales person, buyer, etc.)	13	23	41
Secretarial	19	8	19
Transportation & Storage	7	6	15
Wholesale	8	8	22
Finance and Credit	10	16	29
Mean Response: Business Area	16.6	17.9	22.8
ART AND JOURNALISM			
Commercial Art	14	12	33
Interior Design	21	14	46
Librarian Assistant	12	6	6
Museum Assistant	5	7	5
Performing Arts (music, dance, theatre, radio, and TV)	10	12	40
Mean Response: Art & Journalism Area	12.4	10.2	26.0

(table continued on next page)

	THEN	NOW	BOTH THEN AND NOW
HUMAN SERVICES			
Corrections Assistant	5	22	25
Law Enforcement	9	25	36
Recreation Assistant	12	17	29
Social Work Aide	28	27	66
Teacher Assistant	11	29	44
Special Ed. Assistant (retarded, handicapped)	14	22	32
Nursery Ed. Aide	14	14	21
Mean Response: Human Services Area	13.3	22.3	36.1
HEALTH SERVICES			
Dental Assistant	22	11	21
Medical Laboratory Assistant	8	14	20
Nursing (RN - Assoc. Deg.)	11	9	26
Psychiatric Aide	15	25	30
Rehabilitation Aide	10	23	24
Radiologic Technician	9	11	7
Mean Response: Health Services Area	12.5	15.5	21.3
Mean Response: All Occupations	14.3	16.2	26.2

Perusal of the technical occupations listed in Table IV indicates that business machine technology is the most appealing Technical occupation to students but that Technical occupations as a whole are apparently of only moderate interest to General College students. Business area occupations generated more positive response on the part of the students than Technical area occupations, with data processing leading in student interest, accounting second, and retailing third. Accounting was chosen about as often as business machine technology in the technical area. Two of the Art and Journalism occupations -- interior design and performing arts -- were at the same level of interest as retailing.

Somewhat suprisingly, the Human Services occupations are of most interest to students. While Human Services and Business generated equal response on entrance, interest in the Human Services occupations increased during attendance, while interest in the Business area remained relatively constant. The Human Service area also contained the one occupation generating the most interest -- social work aide. Two other occupations in the Human Service

area -- corrections assistant and teacher aide -- led the 36 separate occupations in increasing interest; that is, the difference in current interest from past interest was greater for these two occupations than for the other occupations.

Equally surprising was the infrequent interest expressed in the Health Services area. Interest in it, the Technical, and the Art and Journalism areas was at about the same level, considerably below the level in the Business and Human Services area. Two of the occupations -- psychiatric aide and rehabilitation aide -- did demonstrate large gains in current interest from original interest. The list of the occupations in order of change in interest is given below in Table V. Of the top twelve occupations in order of increased interest, five are in Human Services, three in Health Services, four in Business, and none in either Technical or Arts and Journalism areas.

Table V

Change of Interest for Each Occupational Program

Rank	Occupation	Area	Rank	Occupation	Area
1	Teacher Assistant	Hum S	20	Electronics Technology	Tech
2	Corrections Assistant	Hum S	20	Nursery Ed. Aide	Hum S
3	Rehabilitation Aide	Health	20	Wholesale	Bus
5	Psychiatric Aide	Health	23.5	Outside selling	Bus
5	Retailing	Bus	23.5	Radio, TV Technician	Tech
5	Data Processing	Bus	23.5	Social Work Aide	Hum S
7	Law Enforcement	Hum S	23.5	Transportation & Storage	Bus
8.5	Hotel-Motel Management	Bus	27	Commercial Art	A & J
8.5	Special Ed. Assistant	Hum S	27	Nursing	Health
10.5	Medical Laboratory Asst.	Health	27	Horticulture	Tech
10.5	Finance and Credit	Bus	29	Foods Technologist	Tech
12	Recreation Assistant	Hum S	30	Librarian Assistant	A & J
13	Chemical Technician	Tech	31.5	Business Machines Tech.	Tech
15.5	Museum Assistant	A & J	31.5	Interior Design	A & J
15.5	Radiologic Technician	Health	33	Chef-Baker	Tech
15.5	Industrial Technician	Tech	34	Accounting	Bus
15.5	Performing Arts	A & J	35.5	Dental Assistant	Health
18	Communication Electronics	Tech	35.5	Secretarial	Bus

In order to make comparisons among occupational programs, it was necessary to develop a scale. Since it was felt that the student's current interest was more important than his original interest and that the combination of current and past interest was even more important, a score for each occupation was determined by adding one point for each student who checked the "then" column, two points for each student who checked the "now" column, and three points if a student checked both then and now. Each occupation was then ranked on three scales -- males, females and the total group. The rankings are given in Table VI.

Table VI

Rank of Interest Expressed in Individual Occupational Programs by Sex

	Male	Female	Total
TECHNICAL			
Business Machines Technologist (Computers)	2	24	4
Chemical Technician	20	35	29
Chef - Baker (food prep)	31	31	36
Communication Electronics	16	32	24
Electronics Technologist	15	33	23
Foods Technologist (processing, quality control)	29	30	35
Horticulture (greenhouse, management, landscaping)	25	34	32
Industrial Technician	14	36	27
Radio, TV Technician	13	26	21
BUSINESS			
Data Processing	1	16	2
Accounting	3	19	3
Hotel-Motel Management	7	22	12
Outside Selling (real estate, insurance, etc.)	6	25	13
Retailing (sales person, buyer, etc.)	8	14	7
Secretarial	33	7	25
Transportation & Storage	23	27	30
Wholesale	17	28	26
Finance and Credit	9	29	18
ART AND JOURNALISM			
Commercial Art	21	13	15
Interior Design	22	2	6
Librarian Assistant	35	18	33
Museum Assistant	32	20	34
Performing Arts (music, dance, theatre, radio, TV)	19	10	11

	Male	Female	Total
HUMAN SERVICES			
Corrections Assistant	10	17	16
Law Enforcement	4	23	8
Recreation Assistant	12	15	14
Social Work Aide	5	1	1
Teacher Assistant	11	4	5
Special Ed. Assistant (retarded, handicapped)	28	3	10
Nursery Ed. Aide	36	6	22
HEALTH SERVICES			
Dental Assistant	30	12	28
Medical Laboratory Assistant	26	11	20
Nursing (RN - Assoc. Deg.)	34	5	19
Psychiatric Aide	18	8	9
Rehabilitation Aide	24	9	17
Radiologic Technician	27	21	31

It is readily apparent that interest is definitely related to the sex of the respondent. Except for isolated and expected exceptions (business machine technologist, law enforcement, and social work aide), the male students prefer business related occupational programs. Primary focus within this area is the computer-data processing-accounting complex. A secondary focus involves retailing-selling-finance and credit. Male students expressed very little interest in either the Health Services or the Art and Journalism occupational areas.

Female students, however, expressed very strong interest in the Human Services area and moderate interest in the Health Services area. While it was not possible to directly express negative interest, female students completely ignored the Technical area and, except for secretarial programs, expressed little interest in the Business area.

The five occupational areas into which individual courses are grouped in the tables above represent one way to categorize the courses. There are, however, other ways to classify the same courses. The General College, for instance, already groups certain courses into various occupational sequences, so that students who are interested in particular occupations can "specialize" in them by completing a certain group of courses. Thus, for example, the

General College student interested in business may enroll in the marketing sequence, which consists of such courses as outside selling, retailing, and finance and credit. Currently, there are only two such sequences of courses in the General College, but more are being considered. In order to provide this study with an additional dimension, the authors attempted to determine student interest in the General College occupational sequences now available, as well as student interest in sequences under consideration. The results of student response to the two sequences presently available, to the two which will become available in 1968-69, and to six other sequences in various stages of development are given in Tables VII and VIII.

Table VII

Interest in Occupational Sequences Available to Students 1968-1969

	Then	Now	Both	Total
Sequence 1: Dental Assisting				
Dental Assisting	22	11	21	
Number of different students	22	11	21	54
Sequence 2: Marketing				
Outside Selling	17	16	28	
Retailing	13	23	41	
Transportation and Storage	7	6	15	
Wholesale	8	8	22	
Finance and Credit	10	16	29	
Number of different students	28	39	80	147
Sequence 3: Secretarial				
Secretarial	19	8	19	
Number of different students	19	8	19	46
Sequence 4: Horticulture				
Greenhouse Management, Landscaping	11	9	8	
Number of different students	11	9	8	28

Table VIII

Interest in Occupational Sequences Presently Being Investigated

	Then	Now	Both	Total
Sequence 1: Technical				
Chemical Technician	13	16	14	
Communication Electronics	15	16	16	
Industrial Technician	14	16	16	
Radio, TV Technician	14	13	21	
Number of different students	32	32	38	102
Sequence 2: Business				
Business Machines Technologist	36	29	43	
Data Processing	29	39	52	
Accounting	32	23	51	
Number of different students	51	54	84	189
Sequence 3: Foods				
Chef-Baker	11	3	4	
Foods Technologist	3	5	6	
Number of different students	14	6	9	29
Sequence 4: Police Science				
Corrections Assistant	5	22	25	
Law Enforcement	9	25	30	
Number of different students	14	40	52	106
Sequence 5: Human Services Aide				
Recreation Assistant	12	17	29	
Social Work Aide	28	27	66	
Psychiatric Aide	15	25	30	
Rehabilitation Aide	10	23	24	
Number of different students	32	57	97	186
Sequence 6: Education Aide				
Teacher Assistant	11	29	44	
Special Education Assistant	14	22	32	
Nursery Education Assistant	14	14	21	
Number of different students	20	45	63	128

As one peruses Tables VII and VIII and remembers the differences between male and female respondents, he realizes that the General College offers two sequences (Dental Assisting and Secretarial) for the female students which are of interest to about 30 to 40 percent of the female students, one sequence (Marketing) of interest to 30 to 40 percent of both male and female students, and one sequence (Horticulture) of interest to only 10 percent of the male students. Within the marketing sequence, the female students are interested almost exclusively in the retailing aspects while the male student indicates more general interest. A similar perusal of Table VIII leads one to conclude that several sequences of considerable interest to both males and females are presently being discussed. Two -- Business and Human Services -- are of interest to 40 or more percent of the General College population. (The overlap of interest was not determined.) Only one of the sequences -- Foods -- seems to be of little interest to our students.

APPENDIX A

THE GENERAL COLLEGE

UNIVERSITY OF MINNESOTA

To the General College Student from the College Faculty:

In its continuing efforts to provide educational opportunities which are meaningful and appropriate for its students, the General College Faculty now seeks your assistance. As you know, the College does have a few programs such as Dental Assisting, Recreation Leadership, and Retailing and Selling which are directed at specific occupations. We are now considering the possibility of increasing the number of occupational programs and need to know what types of programs interest you.

On the following page is a listing of occupations or occupational areas for which the College, in cooperation with local Twin Cities businesses, industries, agencies and schools, might develop programs. These programs would combine general education (courses in GC) with courses and/or supervised experiences in the outside facility. An appropriate University degree (probably a two or three-year degree) would be granted upon successful completion of the program.

Please examine the list and if you think you would have been interested in a particular occupational program at the time you first registered in the General College, check in the THEN column; if interested in such a program now, check in the NOW column; check both columns if interested both then and now. If not interested in any of the programs listed, indicate in space provided at bottom of page the type of educational program in which you are interested. Be sure to provide the other information requested.

Please sign at the bottom of the next page if you would like to be notified of the development of the program(s) you checked.

TECHNICAL	Then	Now
1) Business Machines Technologist (computers)	___	___
2) Chemical Technician	___	___
3) Chef-Baker (food prep.)	___	___
4) Communication Electronics	___	___
5) Electronics Technologist	___	___
6) Foods Technologist (processing, quality control, etc.)	___	___
7) Horticulture (greenhouse management, landscaping)	___	___
8) Industrial Technician	___	___
9) Radio, TV Technician	___	___
BUSINESS		
10) Data Processing	___	___
11) Accounting	___	___
12) Hotel-Motel Management	___	___
13) Outside Selling (real estate, insurance, etc.)	___	___
14) Retailing (sales Person, buyer, etc.)	___	___
15) Secretarial	___	___
16) Transportation & Storage	___	___
17) Wholesale	___	___
18) Finance and Credit	___	___

ART AND JOURNALISM	Then	Now
19) Commercial Art	___	___
20) Interior Design	___	___
21) Librarian Assistant	___	___
22) Museum Assistant	___	___
23) Performing Arts (music, dance, theatre, radio, TV)	___	___
HUMAN SERVICES		
24) Corrections Assistant	___	___
25) Law Enforcement	___	___
26) Recreation Assistant	___	___
27) Social Work Aide	___	___
28) Teacher Assistant	___	___
29) Special Ed. Assistant (retarded, handicapped)	___	___
30) Nursery Ed. Aide	___	___
HEALTH SERVICES		
31) Dental Assistant	___	___
32) Medical Laboratory Ass't.	___	___
33) Nursing (RN-Assoc. Deg.)	___	___
34) Psychiatric Aide	___	___
35) Rehabilitation Aide	___	___
36) Radiologic Technician	___	___

* *

If you have checked any of the above, would you prefer a one-year, two-year or a three-year program? One____ Two____ Three____.

If not interested in any of the above, indicate type of educational program in which you are interested _____.

MALE____ FEMALE____ AGE____ Total number of college credits completed _____.

Presently employed: YES____ NO____. If YES, number of hours per week____ and what you do _____.

Would you like to continue on this job if there were opportunity for advancement? YES____ NO____.

SIGNATURE _____